

IN THE DRAWINGS:

A Letter to the Official Draftsman is attached with proposed drawing substitutions to Figures 34-39.

The attached sheets of drawings include changes to Figs. 34-39. These sheets, which include Figs. 34-39, replace the original sheets of Figs. 34-39.

REMARKS

In the Office Action, the Draftsman objected to the drawings filed September 19, 2006. The Examiner rejected claim 2 under 35 U.S.C. 112, second paragraph, as being indefinite. Claims 1-6 and 10 were rejected under 35 U.S.C. 102(b) as being anticipated by Kakehi et al. in U.S. Patent No. 5,934,680. Claims 7-9 were rejected under 35 U.S.C. 103(a) as being unpatentable over Kakehi et al. in view of Ruthenburg in U.S. Patent No. 3,784,215.

The present invention as defined in claim 1 is characterized in that the linear contact portion which is provided on one side of the separation portion, and the linear contact portion which is provided on the other side of the separation portion are located at a distance in a radial direction of the seal ring so that an inner circumferential surface of the first end part on one side of the separation portion comes into contact with an outer circumferential surface of the second end part on the other side of the separation portion in order to control a quantity of leakage from the sealed fluid side to the unsealed fluid side. For example, Figure 3 shows the condition that an inner circumferential surface of the first end part on one side of the separation portion comes into contact with an outer circumferential surface of the second end part on the other side of the separation portion (see elements 25 in Fig. 3).

According to the present invention as defined in claim 1, “it is permitted to control the quantity of leakage of a sealed fluid by the size of a gap which is formed owing to the fact that the linear contact portions are provided at the diametric distance in the separate portion. ...” (Page 8, line 9 to page 9, line 13).

For example, as shown in Figure 1, two linear contact portions (41a, 41b) are provided at the separation portion, and one linear contact portion (41c) is provided at the other portion. The two linear contact portions make a leakage path R as shown in Figure 2 in order to control a quantity of leakage from the sealed fluid side to the unsealed fluid side. In the present invention, it is possible to efficiently reduce the quantity of leakage by providing the leakage path R at only the separation portion while sealing capability is improved. That is, leakage control is performed by providing the two linear contact portions at only the separation portion.

In contrast, Kakehi et al. (U.S. Patent No. 5,934,680) disclose three lubricant grooves 52 and sealing surfaces 51 shown in Figures 19A and 19B (column 9, line 9 from the bottom to column 10, line 15). Kakehi et al. disclose that this invention relates to a real ring made of a synthetic resin for preventing leakage of a liquid (column 1, lines 6-7).

That is, Kakehi et al. fail to disclose or suggest “the linear contact portion which is provided on one side of the separation portion, and the linear contact portion

which is provided on the other side of the separation portion are located at a distance in a radial direction of the seal ring so that an inner circumferential surface of the first end part on one side of the separation portion comes into contact with an outer circumferential surface of the second end part on the other side of the separation portion in order to control a quantity of leakage from a sealed fluid side to the unsealed fluid side”.

Kakehi et al. fail to disclose that side shapes of the seal ring are different between the separation portion and the other portion as shown in Figures 1 and 2 of the present invention and to control a leakage at the separation portion.

The Examiner is requested to point out where Kakehi et al. disclose the structure for controlling a leakage at the separation portion.

Also, Ruthenberg (U.S. Patent No. 3,784,215) fails to disclose or suggest such a feature of the present invention of claim 1.

That is, Ruthenberg fails to disclose that side shapes of the seal ring are different between the separation portion and other portion as shown in Figures 1 and 2 of the present invention and to control a leakage at the separation portion.

Basically, Ruthenberg discloses sealing rings, which do not allow leakage, used for a piston 64.

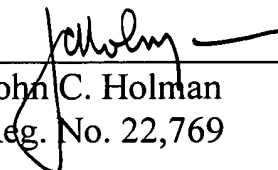
Thus, independent claim 1 is allowable. Also, dependent claims 2-10 are allowable.

Based on the foregoing amendments and remarks, it is respectfully submitted that the claims in the present application, as they now stand, patentably distinguish over the references cited and applied by the Examiner and are, therefore, in condition for allowance. A Notice of Allowance is in order, and such favorable action and reconsideration are respectfully requested.

However, if after reviewing the above amendments and remarks, the Examiner has any questions or comments, he is cordially invited to contact the undersigned attorneys.

Respectfully submitted,

JACOBSON HOLMAN, PLLC

By: 
John C. Holman
Reg. No. 22,769

400 Seventh Street, N.W.
Washington, D.C. 20004-2201
(202) 638-6666
Date: January 19, 2007
JLS/arc